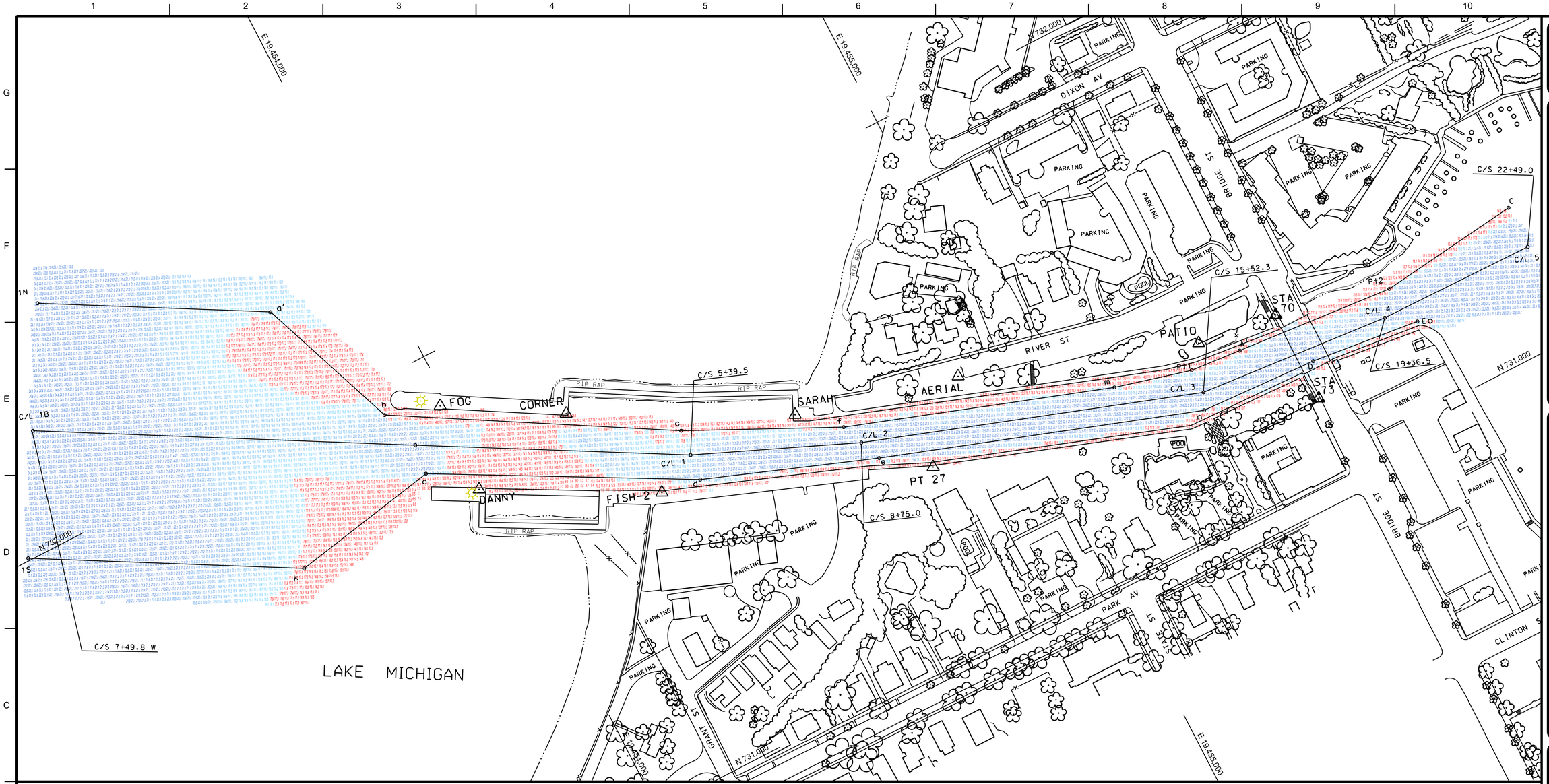


ALL SOUNDINGS ARE REFERENCED TO I.G.L.D. 1985 FOR LAKE MICHIGAN, ELEVATION 577.5 FT. ABOVE MEAN SEA LEVEL AT RIMOUSKI, QUEBEC.

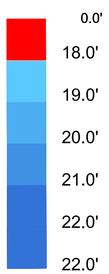
GRID SYSTEM BASED ON LAMBERT PROJECTION, MICHIGAN STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE (2112) 1983 NORTH AMERICAN DATUM, U.S. FOOT.

THE SOUNDINGS INDICATED HEREIN ARE GENERALIZED DEPTHS AND ARE NOT REPRESENTATIVE OF THE FULL DATA SET. THE SOUNDINGS REPRESENT THE MINIMUM DEPTH FOUND WITHIN THE 10X10 AREA CENTERED ON THE TEXT, DERIVED FROM A 1X1 AVERAGE DATASET AT CELL CENTER. THIS MAP SHOULD NOT BE USED FOR CHANNEL CLEARANCE OR VOLUME COMPUTATIONS. MINIMUM DEPTH DATA IS PRODUCED FOR STRIKE/SHOAL REMOVAL OPERATIONS AND NOTICE TO NAVIGATION INTERESTS.

VERTICAL WATER LEVEL READINGS WERE TAKEN FROM A FIXED GAUGE MARK ON THE SOUTH SIDE OF THE SHEET STEEL WALL NEAR CROSS SECTION 03+00.

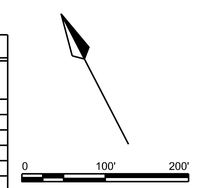
SURVEYED ON: 05 DECEMBER 2019
POSITIONING METHOD: APPLANIX POS M/V W/DGPS CORRECTIONS
MOTION COMPENSATION: APPLANIX OCEAN MASTER POS M/V
EQUIPMENT: R2 SONIC 2024 MULTIBEAM ECHOSOUNDER
SOFTWARE: HYPACK
VESSEL: LAUNCH 3058

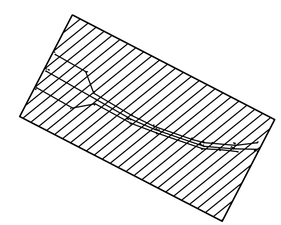
18' Legend

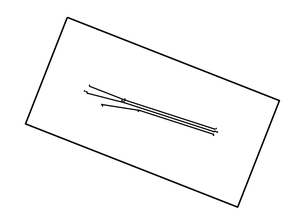


CHANNEL LINE TURNING PT. CONTROL		
CHANNEL POINT	COORDINATES NORTH (Y)	EAST (X)
1N	732,440.24	19,453,376.14
a'	732,215.80	19,453,773.65
b	731,933.63	19,453,879.44
c	731,639.43	19,454,381.24
f	731,499.52	19,454,667.30
m	731,325.03	19,455,174.19
PT. 1	731,285.24	19,455,324.01
A'	731,276.46	19,455,425.30
PT. 2	731,249.07	19,455,741.20
C	731,282.87	19,456,021.42
1S	732,004.88	19,453,130.31
k	731,738.94	19,453,601.33
a	731,794.30	19,453,898.61
d	731,537.36	19,454,370.55
e	731,413.69	19,454,701.30
n	731,204.34	19,455,309.72
D	731,191.86	19,455,543.72
E	731,167.32	19,455,760.84

CENTERLINE TURNING POINT CONTROL		
C/L TURN PT.	COORDINATES NORTH (Y)	EAST (X)
1B	732,222.56	19,453,253.22
0	731,853.49	19,453,905.85
1	731,588.70	19,454,375.90
2	731,456.60	19,454,684.30
3	731,236.13	19,455,324.74
4	731,202.95	19,455,707.45
5	731,197.62	19,456,019.96







US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

SURVEYED BY: E.D.S.	ISSUE DATE: 05-Dec-2019
DRAWN BY: E.D.S.	SOLICITATION NO.:
REVIEWED BY:	CONTRACT NO.:
APPROVED BY:	DRAWING NUMBER:
SIZE: ANSI D	FILE NAME: Charlevoix 2019.dgn

U.S. ARMY CORPS OF ENGINEERS
DETROIT DISTRICT
477 MICHIGAN AVE
DETROIT, MI 48226

LAKE MICHIGAN AREA OFFICE
307 SOUTH HARBOR DR
GRAND HAVEN, MI 49417

CHARLEVOIX HARBOR
MICHIGAN
CONDITION OF CHANNEL

CH_01_20191205_CVH
DECEMBER 2019

SHEET ID

VH101

ALL SOUNDINGS ARE REFERENCED TO I.G.L.D. 1985 FOR LAKE MICHIGAN, ELEVATION 577.5 FT. ABOVE MEAN SEA LEVEL AT RIMOUSKI, QUEBEC.

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VERTICAL WATER LEVEL READINGS WERE TAKEN FROM A FIXED GAUGE MARK ALONG THE SHEET STEEL WALL IN THE GRAND HAVEN GOVERNMENT BASIN.

SURVEYED ON: 05 DECEMBER 2019
POSITIONING METHOD: APPLANIX POS M/V W/DGPS CORRECTIONS
MOTION COMPENSATION: APPLANIX OCEAN MASTER POS M/V
EQUIPMENT: R2 SONIC 2024 MULTIBEAM ECHOSOUNDER
SOFTWARE: HYPACK
VESSEL: LAUNCH 3058

18' Legend

	0.0'
	18.0'
	19.0'
	20.0'
	21.0'
	22.0'
	22.0' +

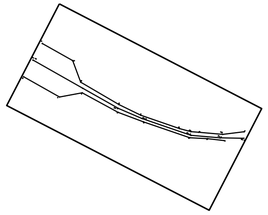
CENTERLINE TURNING POINT CONTROL

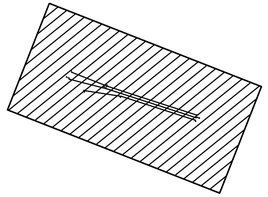
C/L POINT	COORDINATES NORTH (Y)	COORDINATES EAST (X)
6	730,306.65	19,457,442.25
7	730,182.65	19,457,926.64
8	729,803.44	19,459,101.83

CHANNEL LINE TURNING PT. CONTROL

CHANNEL POINT	COORDINATES NORTH (Y)	COORDINATES EAST (X)
t	730,398.27	19,457,471.81
w	730,215.96	19,457,937.39
Z	729,836.75	19,459,112.58
u	730,159.16	19,457,631.04
s	730,081.94	19,458,125.06
R	729,770.13	19,459,091.08

0 100' 200'





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CHARLEVOIX HARBOR
MICHIGAN
CONDITION OF CHANNEL

CH_02_20191205_CVH
DECEMBER 2019

SHEET ID
VH102